polarzero

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Most of my experience as a software engineer is in AI and blockchain, and nearly all of my work has been open source—whether for companies, on contract, or independently. I'm currently building at Amont Labs, where I try to recognize early shifts in model capabilities and user behavior, and turn them into useful apps and libraries.

I stay close to these changes by building and using products myself, exchanging ideas with peers I respect, and paying attention to emerging patterns in developer experience, UX, tooling, interfaces, and product habits. I'm also interested in local-first software, fully onchain games, and developer tooling.

As engineering becomes more intuitive, I'm increasingly able to focus on product, intent, and taste. I'm working toward becoming a stronger product-minded engineer while keeping the discipline and curiosity to approach unfamiliar problems methodically.

WORK

2026-08 now

Amont Labs

Practical, open-source software on emerging tech

- **Fjord:** a macOS app between coding agents and everything they work with, bringing you only what needs your attention (WIP).
- **Silo:** computers for agents, sandboxed Linux and macOS VMs with a desktop and computer use; the engine behind Fjord.
- **LCU:** Codex computer use decoupled from the app, for any agent harness.
- **Sic:** live fact-checking of political debates against official sources (WIP).
- **Hartlib:** one cited research chat across your subscriptions (paused).

website github

2025-04 now

Tevm

Contributing to a multi-language library for running an EVM in every environment

- **@tevm/compiler:** shipped a Solidity & Vyper compiler around Foundry compilers for Typescript.
- **tevm-monorepo:** contributed to call/debug and tracing methods, storage layout and pre/post-state tooling, and various other runtime, API, build, and documentation contributions.
- **@tevm/mud:** shipped a MUD integration for optimistic updates, executing writes locally with Tevm's MemoryClient, exposing React optimistic-state hooks, and reconciling pending transactions with canonical chain state.
- **guillotine:** contributed to a Zig EVM, including a Zig devtool and BubbleTea CLI for call disassembly and step-by-step tracing, Go/C/WASM/TypeScript SDK bindings, EVM semantics fixes, and research-heavy work on hardfork support, gas accounting, and execution spec fixtures.
- **guillotine-mini:** contributed WASI/WASM build and bindings, and research-heavy EVM tracing/debugging work around WASM constraints, threading, debugger architecture, and dispatch-level execution hooks.
- **@tevm/test-matchers:** shipped a Javascript library that extends Vitest with EVM-related test matchers.
- **@tevm/test-node:** shipped a Javascript library to snapshot EVM JSON-RPC calls in Vitest/Bun.

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2024-04 2025-03

Primodium

Worked at a startup backed by Alliance, Paradigm, and A16Z Games, exploring onchain games and crypto user-facing products

- **DEX Indexer:** shipped a Yellowstone gRPC Typescript indexer for Solana DEX trades.
- **DEX GraphQL:** shipped a Hasura + Timescale GraphQL client for querying DEX activity & analytics on Solana.
- **DEX Server:** contributed server/package work around buy/sell flows, SOL/USD price caching, transaction analytics, Hasura/cache integration, Docker/package workflows, and docs.
- **Tub:** contributed across the Solana indexer, GraphQL/Hasura/Timescale layer, dashboard/explorer, server analytics, and iOS query/chart/transaction integration surfaces.
- **Gasless server:** shipped a MUD-compatible gasless server library for EVM chains.
- **Primodium Empires:** contributed client UI/game tooling, cheatcodes, transaction feedback, keeper/deployment infrastructure, and contract test/audit-prep work, while owning the artist handoff loop for integrating art and animations into the game.
- **Reactive Tables:** shipped a state management library for onchain games built on MUD for Typescript & React.
- **Primodium v0.11:** took ownership of the sync/indexer and database stack, and shipped client/core rendering work, game-object interaction fixes, reactive-table integration, package/build fixes, and browser profiling-driven performance optimizations.
- **Open-source release:** owned the public release pass for the work above, including documentation for each package and shipping the open-sourced libraries and containers.

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RESEARCH

2024-02 2024-03

Research: EVM gas benchmarks

Various research projects on EVM gas usage and tooling

- **airdrop gas benchmarks:** a series of tests to benchmark gas usage across ERC20/721/1155 patterns with batched, merkle, and claim style drops, picked from popular airdrop contracts — comes with an interactive dashboard to analyze costs based on airdrop parameters.
- **gas metering comparison:** cross-validated gas reports from popular tooling against live executions with Foundry, Hardhat, and Tevm on identical calldata sets, and documented discrepancies.

2023-11 2023-12

Research: EVM security

Various research projects on EVM security and tooling

- **Glider:** joined Secureum workshop sessions to battle-test Glider on live exploit scenarios, and submitted documentation fixes and clarified flows for security researchers.
- **storage collision:** a reference research for verifying smart contract assumptions using fuzzing & formal verification tools (here exhibiting storage collision) with Foundry, Halmos, and Certora.
- **ERC1155A:** a reference fuzzing test suite on a token extension to verify assumptions and surface edge cases.

More about my projects, experiments, writing and education at polarzero.xyz